EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Marcia Doubet on 16 August 2010.

The application has been amended as follows:

Listing of the claims:

Claim 1 (currently amended): A ~~computer-implemented~~ method of monitoring network performance where performance requirements are already established in order to generate anticipatory alerts, comprising:

monitoring, by a computer, a performance-defining metric on a recurring basis to obtain samples of the metric;

determining a trend in actual service based on the obtained samples of the metric using linear regression, further comprising:

analyzing a set of samples obtained over a predetermined sampling interval to determine whether the analyzed set satisfies predetermined reliability criteria, the predetermined reliability criteria requiring a predetermined, minimum number of samples in the set; and

if the analyzed set of samples satisfies the predetermined reliability criteria, then using the set of samples in the linear regression, further comprising:

determining a standard deviation and a mean of the ones of the obtained sets of samples,

determining a ratio of the standard deviation and the mean of the ones of the obtained sets of samples, and

generating a prediction, using the ones of the obtained sets of samples in which the ratio of the standard deviation and the mean does not exceed a predefined threshold, of a time at which the metric will cross a defined threshold if the current trend continues;

~~determining a predicted performance violation time equal to a time at which the actual service will cease to meet the established performance requirements if the determined trend continues; and~~

generating an ~~anticipartory~~anticipatory alert if the time at which the metric will cross the defined threshold is less than a predetermined time from a current time at which the prediction is made ~~predicted performance violation time falls within a predetermined time window that begins at a current time~~; and

canceling a previously generated alert if a subsequently-generated mathematical representation of the current trend predicts that the time when the network performance metric will exceed the defined threshold is not within a predetermined time window measured from a current time at which the subsequent prediction is made.

Claims 2-6 (canceled).

Claim 7 (currently amended): A method for ~~For~~ use in a system for providing an anticipatory alert wherein at least one network performance metric is required to comply with a defined threshold, ~~a computer-implemented method for providing an anticipatory alert,~~ comprising:

monitoring, by a computer, a provided service to obtain, on a recurring basis, sets of samples representing actual network performance;

using only the obtained sets of samples containing at least a predetermined minimum number of samples in a linear regression analysis to generate a mathematical representation of a current trend in the network performance, further comprising:

calculating predefined statistical parameters of each obtained set of samples, wherein the calculated predefined statistical parameters comprise a standard deviation and mean of the set of samples,

determining whether the calculated predefined statistical parameters meet a predefined threshold requirement, and

using, in the linear regression analysis, only the obtained sets of samples for which the calculated predefined statistical parameters are determined to meet the predefined threshold requirement;

using the mathematical representation, predicting a time when the network performance metric will exceed the defined threshold if the current trend continues;

generating the anticipatory alert if the predicted time is within a fixed time window measured from a current time at which the prediction is made; and

canceling a previously generated alert if a subsequently-generated mathematical representation of the current trend predicts that the time when the network performance metric will exceed the defined threshold is not within the fixed time window measured from a current time at which the subsequent prediction is made.

Claims 8-10 (canceled).

Claim 11 (currently amended): A computer-implemented method The method as set forth in claim 7, wherein:

the calculated predefined statistical parameters comprise a standard deviation and mean of the set of samples; and

the predefined threshold requirement requires that the standard deviation be no greater than a predetermined percentage of the mean.

Claim 12 (currently amended): A system for providing an anticipatory alert indicating a predicted violation of a predetermined network performance requirement, the system comprising:

a memory;

a performance monitor which obtains sets of samples of a predefined service metric on a recurring basis;

a sample processor which receives the obtained sets of samples and generates a mathematical representation of a current trend in service metric values using ones of the obtained sets of samples that contain at least a predetermined, minimum number of samples, wherein the mathematical representation comprises a linear regression performed using the ones of the obtained sets of samples and the sample processor further comprises:

statistical logic for determining a standard deviation and a mean of the ones of the obtained sets of samples,

arithmetic logic for determining a ratio of the standard deviation and the mean of the ones of the obtained sets of samples, and

prediction logic for generating a prediction, using the ones of the obtained sets of samples in which the ratio of the standard deviation and the mean does not exceed a predefined threshold, of a time at which the service metric will cross a defined threshold if the current trend continues; and

an alert generator for generating the anticipatory alert if the time at which the

service metric will cross the defined threshold is less than a predetermined time from a

current time at which the prediction is made; and

canceling a previously generated alert if a subsequently-generated mathematical

representation of the current trend predicts that the time when the service metric will

cross the defined threshold is not within the predetermined time measured from a

current time at which the subsequent prediction is made.

Claims 13-18 (canceled).

Claim 19 (currently amended): An article of manufacture comprising a non-transitory

computer useable storage medium having a computer readable program embodied

therein, wherein the computer readable program when executed in a computer causes

the computer to:

receive, on a recurring basis, sets of samples of a service metric obtained by

monitoring performance of a network;

calculate predefined statistical parameters of the sets of obtained samples;

determine whether the calculated predefined statistical parameters meet

predefined threshold requirements, wherein the predefined threshold requirements

include requiring a minimum number of samples for each obtained sample set and a

ratio of the calculated predefined statistical parameters that does not exceed a

predetermined ratio;

use ones of the sets of samples which meet the predefined threshold

requirements to generate a mathematical representation of a current trend in the service

metric using linear regression, the linear regression further comprising:

determining a standard deviation and a mean of the ones of the obtained sets of

samples,

determining a ratio of the standard deviation and the mean of the ones of the

obtained sets of samples; and

use the mathematical representation to predict a time when the service metric

will exceed a defined threshold if the current trend continues; and

generate an anticipatory alert if the predicted time is less than a predefined time

from a time at which the prediction is made;

canceling a previously generated alert if a subsequently-generated mathematical

representation of the current trend predicts that the time when the service metric will

exceed the defined threshold is not within the predefined time from a time at which the

subsequent prediction is made.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

The examiner submits that the claims, as amended, are deemed patentable over the cited prior art of record. With respect to at least exemplary independent claim 1, the cited prior art, specifically Brichta (US 5,864,483), Engel (US 5,615,323), Sweet (US 6,836,800), and Baumann (US 5,469,148), fail to teach a method of providing an anticipatory alert as claimed in combination with a method of monitoring as claimed, wherein the monitoring includes a mathematical representation, the mathematical representation includes: determining a standard deviation and a mean of the ones of the obtained sets of samples, determining a ratio of the standard deviation and the mean of the ones of the obtained sets of samples, and generating a prediction, using the ones of the obtained sets of samples in which the ratio of the standard deviation and the mean does not exceed a predefined threshold, of a time at which the service metric will cross a defined threshold if the current trend continues;" and in combination with the generation of an alert, wherein the alert includes:

"generating an anticipatory alert if the time at which the service metric will cross the defined threshold is less than a predetermined time from a current time at which the prediction is made; and canceling a previously generated alert if a subsequently-generated mathematical representation of the current trend predicts that the time when the network performance metric will exceed the defined threshold is not within the predetermined time window measured from a current time at which the subsequent prediction is made."

Independent claims 7, 12 and 19 recite similar limitations as claim 1 and are
therefore deemed patentable over the cited prior art for at least the same reasons.

Any comments considered necessary by applicant must be submitted no later
than the payment of the issue fee and, to avoid processing delays, should preferably
accompany the issue fee. Such submissions should be clearly labeled "Comments on
Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Benjamin Ailes whose telephone number is (571)272-

3899. The examiner can normally be reached Monday-Friday, IFP Hoteling schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Asad Nawaz can be reached on 571-272-3988. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. A. A./
Examiner, Art Unit 2442

/Asad M Nawaz/

Supervisory Patent Examiner, Art Unit 2442